AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

Claims 1-10 (Cancelled).

Claim 11 (New): An optical signal receiving equipment, comprising:

optical-electrical converting means for converting received optical signals into electronic signals;

a plurality of first deciders for transforming the electronic signals into a plurality of first binary signals;

a second decider for transforming the electronic signals into a second binary signal;

decision encoding means for computing identification signals based on the plurality of first binary signals, and for computing reliability information indicating a level of reliability of the computed identification signals;

combiner means for combining the identification signals and the second binary signal to combined identification signals;

error correction means for correcting an error in the combined identification signals by using the reliability information computed by the decision encoding means;

control means for executing an initial identification of the electronic signals in any one of the plurality of first deciders by using an initial threshold level in the plurality of first deciders, for measuring an average amplitude of the electronic signals based on the generated first binary signals, and for correcting the threshold level of the plurality of first deciders based on a variation of the average amplitude of the electronic signals over a time period.

Claim 12 (New): The optical signal receiving equipment according to claim 11, wherein the control means is further configured to control a threshold level of the second decider, and to record an optimum threshold for the second decider.

Claim 13 (New): The optical signal receiving equipment according to claim 12, wherein the control means records the optimum threshold for the second decider when the optical signal receiving equipment starts to operate.

Claim 14 (New): The optical signal receiving equipment according to claim 11, further comprising:

communication quality detection means detecting a communication quality distribution of the combined identification signals generated by the plurality of first deciders and the second decider.

Claim 15 (New): The optical signal receiving equipment according to claim 14,

wherein said control means further corrects a threshold level of one of the plurality of first deciders by shifting the threshold level to a lower or a higher level so as to compensate an error in the communication quality distribution.

Claim 16 (New): An optical signal receiving equipment, comprising:

an optical-electrical converter configured to convert received optical signals into electronic signals;

a plurality of first deciders configured to transform the electronic signals into a plurality of first binary signals;

a second decider configured to transform the electronic signals into a second binary signal;

a decision encoder configured to compute identification signals based on the plurality of first binary signals, and to compute reliability information indicating a level of reliability of the computed identification signals;

a converter configured to combine the identification signals and the second binary signal to combined identification signals;

an error corrector configured to correct an error in the combined identification signals by using the reliability information computed by the decision encoder;

a controller configured to execute an initial identification of the electronic signals in any one of the plurality of first deciders by using an initial threshold level in the plurality of first deciders, to measure an average amplitude of the electronic signals based on the generated first binary signals, and to correct the threshold level of the plurality of first deciders based on a variation of the average amplitude of the electronic signals over a time period.

Claim 17 (New): An optical signal receiving method, comprising:

converting received optical signals into electronic signals;

first transforming the electronic signals into a plurality of first binary signals;

second transforming the electronic signals into a second binary signal;

first calculating identification signals based on the plurality of first binary signals;

second calculating reliability information indicating a level of reliability of the identification signals resulting from said first calculating;

combining the identification signals and the second binary signal into combined identification signals;

correcting an error in the combined identification signals by using the reliability information of said second calculating;

executing an initial identification of the electronic signals by using an initial threshold level when performing said first transforming and measuring an average amplitude of the electronic signals based on the generated first binary signals; and

correcting the threshold level of the first transforming based on a variation of the average amplitude of the electronic signals over a time period.

Claim 18 (New): An optical signal receiving equipment, comprising:

an optical-electrical converting means for converting received optical signals into electronic signals;

a plurality of variable-threshold deciders configured to transform the electronic signals into a plurality of first binary signals;

a soft decision-identification means for computing identification signals based on results of transformation by the plurality of variable-threshold deciders, and for computing reliability information indicating a level of reliability of the identification signals;

an error correction means for correcting an error in the identification signals by using the reliability information computed by the soft decision-identification means;

a fixed-threshold decider configured to execute hard-decision identification of the electronic signals, independently from the soft decision-identification means and the plurality of variable-threshold deciders; and

a control means for executing the hard decision-identification of the electronic signals by using the fixed-threshold decider, for measuring an average amplitude of the electronic signals based on the hard decision-identification results, and for correcting a plurality of

thresholds in the plurality of variable-threshold deciders based on a variation of the measured average amplitude over a time period.